

Sequence Listing:

<110> CSL Ltd and The Council of the Queensland Institute of
 Medical Research
 <120> Expression of hydrophobic proteins
 <130> 13455734
 <150> AU2002950183
 <151> 2002-07-12
 <160> 102
 <170> PatentIn version 3.1

 <210> 1
 <211> 233
 <212> PRT
 <213> epstein-barr virus (EBV)
 <400> 1

 Phe Leu Arg Gly Arg Ala Tyr Gly Leu Pro Tyr Leu Phe Trp Leu Ala
 1 5 10 15
 Ala Ile His Arg Cys Gln Ala Ile Arg Lys Lys Arg Arg Ile Tyr Asp
 20 25 30
 Leu Ile Glu Leu Val Gln Pro Pro Gln Leu Thr Leu Gln Val Gly Leu
 35 40 45
 Cys Thr Leu Val Ala Met Leu Arg Leu Arg Ala Glu Ala Gln Val Lys
 50 55 60
 Ile Glu Asp Pro Pro Phe Asn Ser Leu Tyr Leu Leu Glu Met Leu Trp
 65 70 75 80
 Arg Leu Gly Gln Gly Gly Ser Pro Thr Ala Met Ala Val Leu Leu His
 85 90 95
 Glu Glu Ser Met Ile Ala Leu Tyr Leu Gln Gln Asn Trp Trp Thr Leu
 100 105 110
 Arg Ala Lys Phe Lys Gln Leu Leu Ser Ser Cys Ser Ser Cys Pro Leu
 115 120 125
 Ser Lys Ile Thr Tyr Gly Pro Val Phe Met Cys Leu Gln Ala Lys Trp
 130 135 140
 Arg Leu Gln Thr Leu Arg Pro Pro Ile Phe Ile Arg Arg Leu Val Ser
 145 150 155 160
 Phe Ile Glu Phe Val Gly Trp Tyr Pro Leu His Glu Gln His Gly Met
 165 170 175
 Val Glu Ile Thr Pro Tyr Lys Pro Thr Trp Cys Leu Gly Gly Leu Leu
 180 185 190
 Thr Met Val Glu Glu Asn Leu Leu Asp Phe Val Arg Phe Thr Tyr Ser
 195 200 205
 Ala Gly Ile Val Gln Ile Leu Leu Asp Phe Val Arg Phe Met Gly Val
 210 215 220
 Glu Gly Gly Val Gly Trp Arg His Trp

2/28

225

230

<210> 2
 <211> 233
 <212> PRT
 <213> epstein-barr virus (EBV)
 <400> 2

Phe Leu Arg Gly Arg Ala Tyr Gly Leu Pro Tyr Leu Phe Trp Leu Ala
 1 5 10 15
 Ala Ile His Arg Cys Gln Ala Ile Arg Lys Lys Arg Arg Ile Tyr Asp
 20 25 30
 Leu Ile Glu Leu Gly Leu Cys Thr Leu Val Ala Met Leu Arg Leu Arg
 35 40 45
 Ala Glu Ala Gln Val Lys Ile Glu Asp Pro Pro Phe Asn Ser Leu Thr
 50 55 60
 Tyr Ser Ala Gly Ile Val Gln Ile Leu Leu Asp Phe Val Arg Phe Met
 65 70 75 80
 Gly Val Glu Gly Gly Val Gly Trp Arg His Trp Ile Ala Leu Tyr Leu
 85 90 95
 Gln Gln Asn Trp Trp Thr Leu Arg Ala Lys Phe Lys Gln Leu Leu Ser
 100 105 110
 Ser Cys Ser Ser Cys Pro Leu Ser Lys Ile Thr Tyr Gly Pro Val Phe
 115 120 125
 Met Cys Leu Gln Ala Lys Trp Arg Leu Gln Thr Leu Arg Pro Pro Ile
 130 135 140
 Phe Ile Arg Arg Leu Val Ser Phe Ile Glu Phe Val Gly Trp Tyr Pro
 145 150 155 160
 Leu His Glu Gln His Gly Met Val Glu Ile Thr Pro Tyr Lys Pro Thr
 165 170 175
 Trp Cys Leu Gly Gly Leu Leu Thr Met Val Glu Glu Asn Leu Leu Asp
 180 185 190
 Phe Val Arg Phe Tyr Leu Leu Glu Met Leu Trp Arg Leu Gly Gln Gly
 195 200 205
 Gly Ser Pro Thr Ala Met Ala Val Leu Leu His Glu Glu Ser Met Val
 210 215 220
 Gln Pro Pro Gln Leu Thr Leu Gln Val
 225 230

<210> 3
 <211> 181
 <212> PRT
 <213> epstein-barr virus (EBV)
 <400> 3

Ser Ser Cys Ser Ser Cys Pro Leu Ser Lys Ile His Arg Cys Gln Ala

[illegible]

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Pro | Ile | Val | Ala | Ile | Val | Ala | Leu | Val | Arg | Leu | Arg | Pro | Gly | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Lys | Lys | Lys | Ile | Leu | Lys | Glu | Pro | Val | His | Gly | Val | Pro | Leu | Val | Lys |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Leu | Trp | Tyr | Gln | Leu | Arg | Pro | Gly | Gly | Lys | Lys | Lys | Tyr | Lys | Leu | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Tyr | Lys | Leu | Lys | His | Ile | Val | Trp | Thr | Trp | Glu | Thr | Trp | Trp | Thr | Glu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Tyr | Trp | Glu | Ile | Lys | Asp | Thr | Lys | Glu | Ala | Leu | Lys | Arg | Trp | Ile | Ile |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Leu | Gly | Leu | Asn | Lys | Lys | Leu | Trp | Val | Thr | Val | Tyr | Tyr | Gly | Val | Lys |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ile | Glu | Glu | Leu | Arg | Gln | His | Leu | Met | Thr | Asn | Asn | Pro | Pro | Ile | Pro |

4/28

| 100 | | | | | 105 | | | | | 110 | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Val | Thr | Leu | Trp | Gln | Arg | Pro | Leu | Val | Trp | Ala | Ser | Arg | Glu | Leu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Glu | Arg | Phe | Leu | Leu | Trp | Lys | Gly | Glu | Gly | Ala | Val | Tyr | Thr | Ala | Phe |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Thr | Ile | Pro | Ser | Ile | Ile | Tyr | Gln | Glu | Pro | Phe | Lys | Asn | Leu | Lys | Ser |
| 145 | | | | 150 | | | | | | 155 | | | | | 160 |
| Leu | Tyr | Asn | Thr | Val | Ala | Thr | Leu | Ala | Ile | Ile | Arg | Ile | Leu | Gln | Gln |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Leu | Ala | Ile | Phe | Gln | Ser | Ser | Met | Thr | Lys | Val | Ile | Tyr | Gln | Tyr | Met |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Asp | Asp | Leu | Leu | Val | Gly | Pro | Thr | Pro | Val | Asn | Ile | Thr | Pro | Gln | Asp |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Leu | Asn | Thr | Met | Leu | Tyr | Leu | Ala | Trp | Val | Pro | Ala | His | Lys | Ala | Leu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Val | Glu | Ile | Cys | Thr | Glu | Met | Thr | Leu | Asn | Ala | Trp | Val | Lys | Val | Val |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |

<210> 5
 <211> 239
 <212> PRT
 <213> Hepatitis C virus
 <400> 5

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Phe | Asn | Ile | Leu | Gly | Gly | Trp | Val | Lys | Thr | Ser | Glu | Arg | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gln | Pro | Arg | Phe | Leu | Leu | Leu | Ala | Asp | Ala | Arg | Val | Leu | Leu | Phe | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Leu | Leu | Ala | Asp | Ala | Arg | Leu | Gly | Val | Arg | Ala | Thr | Arg | Lys | Gly | Val |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ala | Gly | Ala | Leu | Val | Ala | Phe | Lys | Leu | Pro | Gly | Cys | Ser | Phe | Ser | Ile |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Phe | Arg | Met | Tyr | Val | Gly | Gly | Val | Glu | His | Arg | Val | Ala | Gly | Ala | Leu |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 |
| Val | Ala | Phe | Lys | Asp | Leu | Met | Gly | Tyr | Ile | Pro | Leu | Val | Leu | Ile | Phe |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Cys | His | Ser | Lys | Lys | Lys | Ile | Leu | Ala | Gly | Tyr | Gly | Ala | Gly | Val | His |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Met | Trp | Asn | Phe | Ile | Ser | Gly | Ile | Gln | Leu | Phe | Thr | Phe | Ser | Pro | Arg |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Arg | Val | Gly | Ile | Tyr | Leu | Leu | Pro | Asn | Arg | Phe | Trp | Ala | Lys | His | Met |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Trp | Asn | Phe | Tyr | Leu | Val | Thr | Arg | His | Ala | Asp | Val | Leu | Ser | Ala | Phe |

| | | | | | | | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----|
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Ser | Leu | His | Ser | Tyr 165 | Trp | Met | Asn | Arg | Leu 170 | Ile | Ala | Phe | Ala | Tyr 175 | Leu |
| Leu | Pro | Arg | Arg 180 | Gly | Pro | Arg | Leu | Tyr 185 | Leu | Val | Ala | Tyr | Gln 190 | Ala | Thr |
| Val | Arg | Leu 195 | Ile | Val | Phe | Pro | Asp 200 | Leu | Gly | Val | Thr | Leu 205 | Gly | Phe | Gly |
| Ala | Tyr 210 | Met | Ser | Lys | Ile | Pro 215 | Phe | Tyr | Gly | Lys | Ala 220 | Ile | Val | Leu | Val |
| Gly 225 | Gly | Val | Leu | Ala | Ala 230 | Cys | Thr | Cys | Gly | Ser 235 | Ser | Asp | Leu | Tyr | |

Tyr Leu Gln Gln Asn Trp Trp Thr Leu

6/28

1

5

<210> 11
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 11

Arg Leu Arg Ala Glu Ala Gln Val Lys
1 5

<210> 12
<211> 11
<212> PRT
<213> epstein-barr virus (EBV)
<400> 12

Ser Ser Cys Ser Ser Cys Pro Leu Ser Lys Ile
1 5 10

<210> 13
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 13

Pro Tyr Leu Phe Trp Leu Ala Ala Ile
1 5

<210> 14
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 14

Thr Tyr Gly Pro Val Phe Met Cys Leu
1 5

<210> 15
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 15

Thr Tyr Ser Ala Gly Ile Val Gln Ile
1 5

<210> 16
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 16

Arg Pro Pro Ile Phe Ile Arg Arg Leu
1 5

<210> 17
<211> 9
<212> PRT

7/28

<213> epstein-barr virus (EBV)
<400> 17

Phe Leu Arg Gly Arg Ala Tyr Gly Leu
1 5

<210> 18
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 18

Gln Ala Lys Trp Arg Leu Gln Thr Leu
1 5

<210> 19
<211> 8
<212> PRT
<213> epstein-barr virus (EBV)
<400> 19

Arg Ala Lys Phe Lys Gln Leu Leu
1 5

<210> 20
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 20

His Arg Cys Gln Ala Ile Arg Lys Lys
1 5

<210> 21
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 21

Arg Arg Ile Tyr Asp Leu Ile Glu Leu
1 5

<210> 22
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 22

Ala Val Leu Leu His Glu Glu Ser Met
1 5

<210> 23
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 23

Tyr Pro Leu His Glu Gln His Gly Met
1 5

8/28

<210> 24
<211> 10
<212> PRT
<213> epstein-barr virus (EBV)
<400> 24

Glu Glu Asn Leu Leu Asp Phe Val Arg Phe
1 5 10

<210> 25
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 25

Glu Gly Gly Val Gly Trp Arg His Trp
1 5

<210> 26
<211> 10
<212> PRT
<213> epstein-barr virus (EBV)
<400> 26

Val Glu Ile Thr Pro Tyr Lys Pro Thr Trp
1 5 10

<210> 27
<211> 10
<212> PRT
<213> epstein-barr virus (EBV)
<400> 27

Val Gln Pro Pro Gln Leu Thr Leu Gln Val
1 5 10

<210> 28
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 28

Ile Ala Leu Tyr Leu Gln Gln Asn Trp
1 5

<210> 29
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 29

Val Ser Phe Ile Glu Phe Val Gly Trp
1 5

<210> 30
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 30

9/28

Ile Glu Asp Pro Pro Phe Asn Ser Leu
1 5

<210> 31
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 31

Gly Gln Gly Gly Ser Pro Thr Ala Met
1 5

<210> 32
<211> 30
<212> DNA
<213> epstein-barr virus (EBV)
<400> 32

agggatccca tggaagatcc tggtttttttc 30

<210> 33
<211> 31
<212> DNA
<213> epstein-barr virus (EBV)
<400> 33

tctagaggtc gacacctgtc gttgtattgg g 31

<210> 34
<211> 12
<212> PRT
<213> epstein-barr virus (EBV)
<400> 34

Ile Ala Leu Tyr Leu Gln Gln Asn Trp Trp Thr Leu
1 5 10

<210> 35
<211> 6
<212> PRT
<213> Hexa-histidine tag
<400> 35

His His His His His His
1 5

<210> 36
<211> 10
<212> PRT
<213> epstein-barr virus (EBV)
<400> 36

Val Met Ser Asn Thr Leu Leu Ser Ala Trp
1 5 10

<210> 37
<211> 9
<212> PRT

10/28

<213> epstein-barr virus (EBV)
<400> 37

Leu Leu Ser Ala Trp Ile Leu Thr Ala
1 5

<210> 38
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 38

Leu Thr Ala Gly Phe Leu Ile Phe Leu
1 5

<210> 39
<211> 8
<212> PRT
<213> epstein-barr virus (EBV)
<400> 39

Cys Pro Leu Ser Lys Ile Leu Leu
1 5

<210> 40
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 40

Arg Arg Arg Trp Arg Arg Leu Thr Val
1 5

<210> 41
<211> 9
<212> PRT
<213> epstein-barr virus (EBV)
<400> 41

Ala Leu Leu Val Leu Tyr Ser Phe Ala
1 5

<210> 42
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 42

Arg Leu Arg Pro Gly Gly Lys Lys Lys
1 5

<210> 43
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 43

Lys Tyr Lys Leu Lys His Ile Val Trp
1 5

11/28

<210> 44
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 44

Trp Ala Ser Arg Glu Leu Glu Arg Phe
1 5

<210> 45
<211> 10
<212> PRT
<213> Human immunodeficiency virus
<400> 45

Arg Pro Gly Gly Lys Lys Lys Tyr Lys Leu
1 5 10

<210> 46
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 46

Ser Leu Tyr Asn Thr Val Ala Thr Leu
1 5

<210> 47
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 47

Glu Ile Lys Asp Thr Lys Glu Ala Leu
1 5

<210> 48
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 48

Thr Leu Asn Ala Trp Val Lys Val Val
1 5

<210> 49
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 49

Thr Pro Gln Asp Leu Asn Thr Met Leu
1 5

<210> 50
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 50

12/28

Met Thr Asn Asn Pro Pro Ile Pro Val
1 5

<210> 51
<211> 10
<212> PRT
<213> Human immunodeficiency virus
<400> 51

Lys Arg Trp Ile Ile Leu Gly Leu Asn Lys
1 5 10

<210> 52
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 52

Val Thr Leu Trp Gln Arg Pro Leu Val
1 5

<210> 53
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 53

Leu Val Gly Pro Thr Pro Val Asn Ile
1 5

<210> 54
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 54

Ala Leu Val Glu Ile Cys Thr Glu Met
1 5

<210> 55
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 55

Tyr Thr Ala Phe Thr Ile Pro Ser Ile
1 5

<210> 56
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 56

Ala Ile Phe Gln Ser Ser Met Thr Lys
1 5

<210> 57
<211> 9
<212> PRT

13/28

<213> Human immunodeficiency virus
<400> 57

Val Ile Tyr Gln Tyr Met Asp Asp Leu
1 5

<210> 58
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 58

Lys Ile Glu Glu Leu Arg Gln His Leu
1 5

<210> 59
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 59

Ile Leu Lys Glu Pro Val His Gly Val
1 5

<210> 60
<211> 10
<212> PRT
<213> Human immunodeficiency virus
<400> 60

Ile Tyr Gln Glu Pro Phe Lys Asn Leu Lys
1 5 10

<210> 61
<211> 10
<212> PRT
<213> Human immunodeficiency virus
<400> 61

Thr Trp Glu Thr Trp Trp Thr Glu Tyr Trp
1 5 10

<210> 62
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 62

Pro Leu Val Lys Leu Trp Tyr Gln Leu
1 5

<210> 63
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 63

Tyr Leu Ala Trp Val Pro Ala His Lys
1 5

14/28

<210> 64
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 64

Leu Leu Trp Lys Gly Glu Gly Ala Val
1 5

<210> 65
<211> 9
<212> PRT
<213> Human immunodeficiency virus
<400> 65

Ala Ile Ile Arg Ile Leu Gln Gln Leu
1 5

<210> 66
<211> 10
<212> PRT
<213> Human immunodeficiency virus
<400> 66

Ile Pro Ile Val Ala Ile Val Ala Leu Val
1 5 10

<210> 67
<211> 10
<212> PRT
<213> Human immunodeficiency virus
<400> 67

Lys Leu Trp Val Thr Val Tyr Tyr Gly Val
1 5 10

<210> 68
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 68

Cys Thr Cys Gly Ser Ser Asp Leu Tyr
1 5

<210> 69
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 69

Phe Leu Leu Leu Ala Asp Ala Arg Val
1 5

<210> 70
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 70

15/28

Tyr Leu Val Ala Tyr Gln Ala Thr Val
1 5

<210> 71
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 71

Arg Leu Ile Val Phe Pro Asp Leu Gly Val
1 5 10

<210> 72
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 72

Asp Leu Met Gly Tyr Ile Pro Leu Val
1 5

<210> 73
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 73

Trp Met Asn Arg Leu Ile Ala Phe Ala
1 5

<210> 74
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 74

Val Leu Val Gly Gly Val Leu Ala Ala
1 5

<210> 75
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 75

His Met Trp Asn Phe Ile Ser Gly Ile
1 5

<210> 76
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 76

Ile Leu Ala Gly Tyr Gly Ala Gly Val
1 5

<210> 77
<211> 10
<212> PRT

16/28

<213> Hepatitis C virus
<400> 77

Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu
1 5 10

<210> 78
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 78

Leu Leu Phe Leu Leu Leu Ala Asp Ala
1 5

<210> 79
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 79

Tyr Leu Val Thr Arg His Ala Asp Val
1 5

<210> 80
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 80

Lys Thr Ser Glu Arg Ser Gln Pro Arg
1 5

<210> 81
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 81

Arg Leu Gly Val Arg Ala Thr Arg Lys
1 5

<210> 82
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 82

Gln Leu Phe Thr Phe Ser Pro Arg Arg
1 5

<210> 83
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 83

Arg Met Tyr Val Gly Gly Val Glu His Arg
1 5 10

17/28

<210> 84
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 84

Leu Ile Phe Cys His Ser Lys Lys Lys
1 5

<210> 85
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 85

Gly Val Ala Gly Ala Leu Val Ala Phe Lys
1 5 10

<210> 86
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 86

Val Ala Gly Ala Leu Val Ala Phe Lys
1 5

<210> 87
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 87

Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys
1 5 10

<210> 88
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 88

Leu Pro Gly Cys Ser Phe Ser Ile Phe
1 5

<210> 89
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 89

Leu Ser Ala Phe Ser Leu His Ser Tyr
1 5

<210> 90
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 90

18/28

Phe Trp Ala Lys His Met Trp Asn Phe
1 5

<210> 91
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 91

Val Gly Ile Tyr Leu Leu Pro Asn Arg
1 5

<210> 92
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 92

Leu Leu Phe Asn Ile Leu Gly Gly Trp Val
1 5 10

<210> 93
<211> 8
<212> PRT
<213> Hepatitis C virus
<400> 93

Ile Pro Phe Tyr Gly Lys Ala Ile
1 5

<210> 94
<211> 242
<212> PRT
<213> epstein-barr virus (EBV)
<400> 94

Met Val Asp Phe Leu Arg Gly Arg Ala Tyr Gly Leu Pro Tyr Leu Phe
1 5 10 15

Trp Leu Ala Ala Ile His Arg Cys Gln Ala Ile Arg Lys Lys Arg Arg
20 25 30

Ile Tyr Asp Leu Ile Glu Leu Val Gln Pro Pro Gln Leu Thr Leu Gln
35 40 45

Val Gly Leu Cys Thr Leu Val Ala Met Leu Arg Leu Arg Ala Glu Ala
50 55 60

Gln Val Lys Ile Glu Asp Pro Pro Phe Asn Ser Leu Tyr Leu Leu Glu
65 70 75 80

Met Leu Trp Arg Leu Gly Gln Gly Gly Ser Pro Thr Ala Met Ala Val
85 90 95

Leu Leu His Glu Glu Ser Met Ile Ala Leu Tyr Leu Gln Gln Asn Trp
100 105 110

Trp Thr Leu Arg Ala Lys Phe Lys Gln Leu Leu Ser Ser Cys Ser Ser
115 120 125

19/28

Cys Pro Leu Ser Lys Ile Thr Tyr Gly Pro Val Phe Met Cys Leu Gln
 130 135 140
 Ala Lys Trp Arg Leu Gln Thr Leu Arg Pro Pro Ile Phe Ile Arg Arg
 145 150 155 160
 Leu Val Ser Phe Ile Glu Phe Val Gly Trp Tyr Pro Leu His Glu Gln
 165 170 175
 His Gly Met Val Glu Ile Thr Pro Tyr Lys Pro Thr Trp Cys Leu Gly
 180 185 190
 Gly Leu Leu Thr Met Val Glu Glu Asn Leu Leu Asp Phe Val Arg Phe
 195 200 205
 Thr Tyr Ser Ala Gly Ile Val Gln Ile Leu Leu Asp Phe Val Arg Phe
 210 215 220
 Met Gly Val Glu Gly Gly Val Gly Trp Arg His Trp His His His His
 225 230 235 240

His His

<210> 95
 <211> 242
 <212> PRT
 <213> epstein-barr virus (EBV)
 <400> 95

Met Val Asp Phe Leu Arg Gly Arg Ala Tyr Gly Leu Pro Tyr Leu Phe
 1 5 10 15
 Trp Leu Ala Ala Ile His Arg Cys Gln Ala Ile Arg Lys Lys Arg Arg
 20 25 30
 Ile Tyr Asp Leu Ile Glu Leu Gly Leu Cys Thr Leu Val Ala Met Leu
 35 40 45
 Arg Leu Arg Ala Glu Ala Gln Val Lys Ile Glu Asp Pro Pro Phe Asn
 50 55 60
 Ser Leu Thr Tyr Ser Ala Gly Ile Val Gln Ile Leu Leu Asp Phe Val
 65 70 75 80
 Arg Phe Met Gly Val Glu Gly Gly Val Gly Trp Arg His Trp Ile Ala
 85 90 95
 Leu Tyr Leu Gln Gln Asn Trp Trp Thr Leu Arg Ala Lys Phe Lys Gln
 100 105 110
 Leu Leu Ser Ser Cys Ser Ser Cys Pro Leu Ser Lys Ile Thr Tyr Gly
 115 120 125
 Pro Val Phe Met Cys Leu Gln Ala Lys Trp Arg Leu Gln Thr Leu Arg
 130 135 140
 Pro Pro Ile Phe Ile Arg Arg Leu Val Ser Phe Ile Glu Phe Val Gly
 145 150 155 160

20/28

Trp Tyr Pro Leu His Glu Gln His Gly Met Val Glu Ile Thr Pro Tyr
 165 170 175
 Lys Pro Thr Trp Cys Leu Gly Gly Leu Leu Thr Met Val Glu Glu Asn
 180 185 190
 Leu Leu Asp Phe Val Arg Phe Tyr Leu Leu Glu Met Leu Trp Arg Leu
 195 200 205
 Gly Gln Gly Gly Ser Pro Thr Ala Met Ala Val Leu Leu His Glu Glu
 210 215 220
 Ser Met Val Gln Pro Pro Gln Leu Thr Leu Gln Val His His His His
 225 230 235 240
 His His

<210> 96
 <211> 669
 <212> PRT
 <213> epstein-barr virus (EBV)
 <400> 96

Met Glu Asp Pro Gly Phe Phe Asn Val Glu Ile Pro Glu Phe Pro Phe
 1 5 10 15
 Tyr Pro Thr Cys Asn Val Cys Thr Ala Asp Val Asn Val Thr Ile Asn
 20 25 30
 Phe Asp Val Gly Gly Lys Lys His Gln Leu Asp Leu Asp Phe Gly Gln
 35 40 45
 Leu Thr Pro His Thr Lys Ala Val Tyr Gln Pro Arg Gly Ala Phe Gly
 50 55 60
 Gly Ser Glu Asn Ala Thr Asn Leu Phe Leu Leu Glu Leu Leu Gly Ala
 65 70 75 80
 Gly Glu Leu Ala Leu Thr Met Arg Ser Lys Lys Leu Pro Ile Asn Val
 85 90 95
 Thr Thr Gly Glu Glu Gln Gln Val Ser Leu Glu Ser Val Asp Val Tyr
 100 105 110
 Phe Gln Asp Val Phe Gly Thr Met Trp Cys His His Ala Glu Met Gln
 115 120 125
 Asn Pro Val Tyr Leu Ile Pro Glu Thr Val Pro Tyr Ile Lys Trp Asp
 130 135 140
 Asn Cys Asn Ser Thr Asn Ile Thr Ala Val Val Arg Ala Gln Gly Leu
 145 150 155 160
 Asp Val Thr Leu Pro Leu Ser Leu Pro Thr Ser Ala Gln Asp Ser Asn
 165 170 175
 Phe Ser Val Lys Thr Glu Met Leu Gly Asn Glu Ile Asp Ile Glu Cys
 180 185 190

21/28

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Met | Glu | Asp | Gly | Glu | Ile | Ser | Gln | Val | Leu | Pro | Gly | Asp | Asn | Lys |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Phe | Asn | Ile | Thr | Cys | Ser | Gly | Tyr | Glu | Ser | His | Val | Pro | Ser | Gly | Gly |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ile | Leu | Thr | Ser | Thr | Ser | Pro | Val | Ala | Thr | Pro | Ile | Pro | Gly | Thr | Gly |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Tyr | Ala | Tyr | Ser | Leu | Arg | Leu | Thr | Pro | Arg | Pro | Val | Ser | Arg | Phe | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Asn | Asn | Ser | Ile | Leu | Tyr | Val | Phe | Tyr | Ser | Gly | Asn | Gly | Pro | Lys |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ala | Ser | Gly | Gly | Asp | Tyr | Cys | Ile | Gln | Ser | Asn | Ile | Val | Phe | Ser | Asp |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Glu | Ile | Pro | Ala | Ser | Gln | Asp | Met | Pro | Thr | Asn | Thr | Thr | Asp | Ile | Thr |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Tyr | Val | Gly | Asp | Asn | Ala | Thr | Tyr | Ser | Val | Pro | Met | Val | Thr | Ser | Glu |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Asp | Ala | Asn | Ser | Pro | Asn | Val | Thr | Val | Thr | Ala | Phe | Trp | Ala | Trp | Pro |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Asn | Asn | Thr | Glu | Thr | Asp | Phe | Lys | Cys | Lys | Trp | Thr | Leu | Thr | Ser | Gly |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Thr | Pro | Ser | Gly | Cys | Glu | Asn | Ile | Ser | Gly | Ala | Phe | Ala | Ser | Asn | Arg |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Thr | Phe | Asp | Ile | Thr | Val | Ser | Gly | Leu | Gly | Thr | Ala | Pro | Lys | Thr | Leu |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Ile | Ile | Thr | Arg | Thr | Ala | Thr | Asn | Ala | Thr | Thr | Thr | Thr | His | Lys | Val |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Ile | Phe | Ser | Lys | Ala | Pro | Glu | Ser | Thr | Thr | Thr | Ser | Pro | Thr | Leu | Asn |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Thr | Thr | Gly | Phe | Ala | Asp | Pro | Asn | Thr | Thr | Thr | Gly | Val | Asp | Phe | Leu |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Arg | Gly | Arg | Ala | Tyr | Gly | Leu | Pro | Tyr | Leu | Phe | Trp | Leu | Ala | Ala | Ile |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| His | Arg | Cys | Gln | Ala | Ile | Arg | Lys | Lys | Arg | Arg | Ile | Tyr | Asp | Leu | Ile |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Glu | Leu | Val | Gln | Pro | Pro | Gln | Leu | Thr | Leu | Gln | Val | Gly | Leu | Cys | Thr |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Leu | Val | Ala | Met | Leu | Arg | Leu | Arg | Ala | Glu | Ala | Gln | Val | Lys | Ile | Glu |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Asp | Pro | Pro | Phe | Asn | Ser | Leu | Tyr | Leu | Leu | Glu | Met | Leu | Trp | Arg | Leu |
| | | | 500 | | | | | 505 | | | | | 510 | | |

22/28

Gly Gln Gly Gly Ser Pro Thr Ala Met Ala Val Leu Leu His Glu Glu
 515 520 525
 Ser Met Ile Ala Leu Tyr Leu Gln Gln Asn Trp Trp Thr Leu Arg Ala
 530 535 540
 Lys Phe Lys Gln Leu Leu Ser Ser Cys Ser Ser Cys Pro Leu Ser Lys
 545 550 555 560
 Ile Thr Tyr Gly Pro Val Phe Met Cys Leu Gln Ala Lys Trp Arg Leu
 565 570 575
 Gln Thr Leu Arg Pro Pro Ile Phe Ile Arg Arg Leu Val Ser Phe Ile
 580 585 590
 Glu Phe Val Gly Trp Tyr Pro Leu His Glu Gln His Gly Met Val Glu
 595 600 605
 Ile Thr Pro Tyr Lys Pro Thr Trp Cys Leu Gly Gly Leu Leu Thr Met
 610 615 620
 Val Glu Glu Asn Leu Leu Asp Phe Val Arg Phe Thr Tyr Ser Ala Gly
 625 630 635 640
 Ile Val Gln Ile Leu Leu Asp Phe Val Arg Phe Met Gly Val Glu Gly
 645 650 655
 Gly Val Gly Trp Arg His Trp His His His His His His
 660 665

<210> 97
 <211> 669
 <212> PRT
 <213> epstein-barr virus (EBV)
 <400> 97

Met Glu Asp Pro Gly Phe Phe Asn Val Glu Ile Pro Glu Phe Pro Phe
 1 5 10 15
 Tyr Pro Thr Cys Asn Val Cys Thr Ala Asp Val Asn Val Thr Ile Asn
 20 25 30
 Phe Asp Val Gly Gly Lys Lys His Gln Leu Asp Leu Asp Phe Gly Gln
 35 40 45
 Leu Thr Pro His Thr Lys Ala Val Tyr Gln Pro Arg Gly Ala Phe Gly
 50 55 60
 Gly Ser Glu Asn Ala Thr Asn Leu Phe Leu Leu Glu Leu Leu Gly Ala
 65 70 75 80
 Gly Glu Leu Ala Leu Thr Met Arg Ser Lys Lys Leu Pro Ile Asn Val
 85 90 95
 Thr Thr Gly Glu Glu Gln Gln Val Ser Leu Glu Ser Val Asp Val Tyr
 100 105 110
 Phe Gln Asp Val Phe Gly Thr Met Trp Cys His His Ala Glu Met Gln
 115 120 125

23/28

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Pro | Val | Tyr | Leu | Ile | Pro | Glu | Thr | Val | Pro | Tyr | Ile | Lys | Trp | Asp |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Asn | Cys | Asn | Ser | Thr | Asn | Ile | Thr | Ala | Val | Val | Arg | Ala | Gln | Gly | Leu |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Asp | Val | Thr | Leu | Pro | Leu | Ser | Leu | Pro | Thr | Ser | Ala | Gln | Asp | Ser | Asn |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Phe | Ser | Val | Lys | Thr | Glu | Met | Leu | Gly | Asn | Glu | Ile | Asp | Ile | Glu | Cys |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Ile | Met | Glu | Asp | Gly | Glu | Ile | Ser | Gln | Val | Leu | Pro | Gly | Asp | Asn | Lys |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Phe | Asn | Ile | Thr | Cys | Ser | Gly | Tyr | Glu | Ser | His | Val | Pro | Ser | Gly | Gly |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ile | Leu | Thr | Ser | Thr | Ser | Pro | Val | Ala | Thr | Pro | Ile | Pro | Gly | Thr | Gly |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Tyr | Ala | Tyr | Ser | Leu | Arg | Leu | Thr | Pro | Arg | Pro | Val | Ser | Arg | Phe | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Asn | Asn | Ser | Ile | Leu | Tyr | Val | Phe | Tyr | Ser | Gly | Asn | Gly | Pro | Lys |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ala | Ser | Gly | Gly | Asp | Tyr | Cys | Ile | Gln | Ser | Asn | Ile | Val | Phe | Ser | Asp |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Glu | Ile | Pro | Ala | Ser | Gln | Asp | Met | Pro | Thr | Asn | Thr | Thr | Asp | Ile | Thr |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Tyr | Val | Gly | Asp | Asn | Ala | Thr | Tyr | Ser | Val | Pro | Met | Val | Thr | Ser | Glu |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Asp | Ala | Asn | Ser | Pro | Asn | Val | Thr | Val | Thr | Ala | Phe | Trp | Ala | Trp | Pro |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Asn | Asn | Thr | Glu | Thr | Asp | Phe | Lys | Cys | Lys | Trp | Thr | Leu | Thr | Ser | Gly |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Thr | Pro | Ser | Gly | Cys | Glu | Asn | Ile | Ser | Gly | Ala | Phe | Ala | Ser | Asn | Arg |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Thr | Phe | Asp | Ile | Thr | Val | Ser | Gly | Leu | Gly | Thr | Ala | Pro | Lys | Thr | Leu |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Ile | Ile | Thr | Arg | Thr | Ala | Thr | Asn | Ala | Thr | Thr | Thr | Thr | His | Lys | Val |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Ile | Phe | Ser | Lys | Ala | Pro | Glu | Ser | Thr | Thr | Thr | Ser | Pro | Thr | Leu | Asn |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Thr | Thr | Gly | Phe | Ala | Asp | Pro | Asn | Thr | Thr | Thr | Gly | Val | Asp | Phe | Leu |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Arg | Gly | Arg | Ala | Tyr | Gly | Leu | Pro | Tyr | Leu | Phe | Trp | Leu | Ala | Ala | Ile |
| | | 435 | | | | | 440 | | | | | 445 | | | |

24/28

His Arg Cys Gln Ala Ile Arg Lys Lys Arg Arg Ile Tyr Asp Leu Ile
 450 455 460
 Glu Leu Gly Leu Cys Thr Leu Val Ala Met Leu Arg Leu Arg Ala Glu
 465 470 475 480
 Ala Gln Val Lys Ile Glu Asp Pro Pro Phe Asn Ser Leu Thr Tyr Ser
 485 490 495
 Ala Gly Ile Val Gln Ile Leu Leu Asp Phe Val Arg Phe Met Gly Val
 500 505 510
 Glu Gly Gly Val Gly Trp Arg His Trp Ile Ala Leu Tyr Leu Gln Gln
 515 520 525
 Asn Trp Trp Thr Leu Arg Ala Lys Phe Lys Gln Leu Leu Ser Ser Cys
 530 535 540
 Ser Ser Cys Pro Leu Ser Lys Ile Thr Tyr Gly Pro Val Phe Met Cys
 545 550 555 560
 Leu Gln Ala Lys Trp Arg Leu Gln Thr Leu Arg Pro Pro Ile Phe Ile
 565 570 575
 Arg Arg Leu Val Ser Phe Ile Glu Phe Val Gly Trp Tyr Pro Leu His
 580 585 590
 Glu Gln His Gly Met Val Glu Ile Thr Pro Tyr Lys Pro Thr Trp Cys
 595 600 605
 Leu Gly Gly Leu Leu Thr Met Val Glu Glu Asn Leu Leu Asp Phe Val
 610 615 620
 Arg Phe Tyr Leu Leu Glu Met Leu Trp Arg Leu Gly Gln Gly Gly Ser
 625 630 635 640
 Pro Thr Ala Met Ala Val Leu Leu His Glu Glu Ser Met Val Gln Pro
 645 650 655
 Pro Gln Leu Thr Leu Gln Val His His His His His His
 660 665

<210> 98
 <211> 187
 <212> PRT
 <213> epstein-barr virus (EBV)
 <400> 98

Ser Ser Cys Ser Ser Cys Pro Leu Ser Lys Ile His Arg Cys Gln Ala
 1 5 10 15
 Ile Arg Lys Lys Cys Leu Gly Gly Leu Leu Thr Met Val Leu Thr Ala
 20 25 30
 Gly Phe Leu Ile Phe Leu Arg Leu Arg Ala Glu Ala Gln Val Lys Ile
 35 40 45
 Glu Asp Pro Pro Phe Asn Ser Leu Leu Leu Ser Ala Trp Ile Leu Thr
 50 55 60

25/28

Ala Arg Arg Arg Trp Arg Arg Leu Thr Val Pro Tyr Leu Phe Trp Leu
 65 70 75 80
 Ala Ala Ile Tyr Leu Leu Glu Met Leu Trp Arg Leu Gly Gln Gly Gly
 85 90 95
 Ser Pro Thr Ala Met Val Met Ser Asn Thr Leu Leu Ser Ala Trp Ala
 100 105 110
 Leu Leu Val Leu Tyr Ser Phe Ala Arg Ala Lys Phe Lys Gln Leu Leu
 115 120 125
 Ile Ala Leu Tyr Leu Gln Gln Asn Trp Thr Tyr Gly Pro Val Phe Met
 130 135 140
 Cys Leu Gln Ala Lys Trp Arg Leu Gln Thr Leu Tyr Leu Gln Gln Asn
 145 150 155 160
 Trp Trp Thr Leu Tyr Pro Leu His Glu Gln His Gly Met Cys Pro Leu
 165 170 175
 Ser Lys Ile Leu Leu His His His His His His
 180 185

<210> 99
 <211> 246
 <212> PRT
 <213> Human immunodeficiency virus
 <400> 99

Ile Pro Ile Val Ala Ile Val Ala Leu Val Arg Leu Arg Pro Gly Gly
 1 5 10 15
 Lys Lys Lys Ile Leu Lys Glu Pro Val His Gly Val Pro Leu Val Lys
 20 25 30
 Leu Trp Tyr Gln Leu Arg Pro Gly Gly Lys Lys Lys Tyr Lys Leu Lys
 35 40 45
 Tyr Lys Leu Lys His Ile Val Trp Thr Trp Glu Thr Trp Trp Thr Glu
 50 55 60
 Tyr Trp Glu Ile Lys Asp Thr Lys Glu Ala Leu Lys Arg Trp Ile Ile
 65 70 75 80
 Leu Gly Leu Asn Lys Lys Leu Trp Val Thr Val Tyr Tyr Gly Val Lys
 85 90 95
 Ile Glu Glu Leu Arg Gln His Leu Met Thr Asn Asn Pro Pro Ile Pro
 100 105 110
 Val Val Thr Leu Trp Gln Arg Pro Leu Val Trp Ala Ser Arg Glu Leu
 115 120 125
 Glu Arg Phe Leu Leu Trp Lys Gly Glu Gly Ala Val Tyr Thr Ala Phe
 130 135 140
 Thr Ile Pro Ser Ile Ile Tyr Gln Glu Pro Phe Lys Asn Leu Lys Ser
 145 150 155 160

26/28

Leu Tyr Asn Thr Val Ala Thr Leu Ala Ile Ile Arg Ile Leu Gln Gln
 165 170 175
 Leu Ala Ile Phe Gln Ser Ser Met Thr Lys Val Ile Tyr Gln Tyr Met
 180 185 190
 Asp Asp Leu Leu Val Gly Pro Thr Pro Val Asn Ile Thr Pro Gln Asp
 195 200 205
 Leu Asn Thr Met Leu Tyr Leu Ala Trp Val Pro Ala His Lys Ala Leu
 210 215 220
 Val Glu Ile Cys Thr Glu Met Thr Leu Asn Ala Trp Val Lys Val Val
 225 230 235 240
 His His His His His His
 245

<210> 100
 <211> 246
 <212> PRT
 <213> Human immunodeficiency virus
 <400> 100

Ile Leu Lys Glu Pro Val His Gly Val Lys Arg Trp Ile Ile Leu Gly
 1 5 10 15
 Leu Asn Lys Thr Leu Asn Ala Trp Val Lys Val Val Lys Ile Glu Glu
 20 25 30
 Leu Arg Gln His Leu Tyr Thr Ala Phe Thr Ile Pro Ser Ile Trp Ala
 35 40 45
 Ser Arg Glu Leu Glu Arg Phe Pro Leu Val Lys Leu Trp Tyr Gln Leu
 50 55 60
 Leu Val Gly Pro Thr Pro Val Asn Ile Ile Pro Ile Val Ala Ile Val
 65 70 75 80
 Ala Leu Val Ser Leu Tyr Asn Thr Val Ala Thr Leu Met Thr Asn Asn
 85 90 95
 Pro Pro Ile Pro Val Leu Leu Trp Lys Gly Glu Gly Ala Val Thr Trp
 100 105 110
 Glu Thr Trp Trp Thr Glu Tyr Trp Ala Ile Phe Gln Ser Ser Met Thr
 115 120 125
 Lys Arg Leu Arg Pro Gly Gly Lys Lys Lys Ala Leu Val Glu Ile Cys
 130 135 140
 Thr Glu Met Lys Leu Trp Val Thr Val Tyr Tyr Gly Val Tyr Leu Ala
 145 150 155 160
 Trp Val Pro Ala His Lys Ala Ile Ile Arg Ile Leu Gln Gln Leu Glu
 165 170 175
 Ile Lys Asp Thr Lys Glu Ala Leu Val Thr Leu Trp Gln Arg Pro Leu
 180 185 190

27/28

Val Ile Tyr Gln Glu Pro Phe Lys Asn Leu Lys Val Ile Tyr Gln Tyr
 195 200 205
 Met Asp Asp Leu Thr Pro Gln Asp Leu Asn Thr Met Leu Arg Pro Gly
 210 215 220
 Gly Lys Lys Lys Tyr Lys Leu Lys Tyr Lys Leu Lys His Ile Val Trp
 225 230 235 240
 His His His His His His
 245

<210> 101
 <211> 245
 <212> PRT
 <213> Hepatitis C virus
 <400> 101

Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Lys Thr Ser Glu Arg Ser
 1 5 10 15
 Gln Pro Arg Phe Leu Leu Leu Ala Asp Ala Arg Val Leu Leu Phe Leu
 20 25 30
 Leu Leu Ala Asp Ala Arg Leu Gly Val Arg Ala Thr Arg Lys Gly Val
 35 40 45
 Ala Gly Ala Leu Val Ala Phe Lys Leu Pro Gly Cys Ser Phe Ser Ile
 50 55 60
 Phe Arg Met Tyr Val Gly Gly Val Glu His Arg Val Ala Gly Ala Leu
 65 70 75 80
 Val Ala Phe Lys Asp Leu Met Gly Tyr Ile Pro Leu Val Leu Ile Phe
 85 90 95
 Cys His Ser Lys Lys Lys Ile Leu Ala Gly Tyr Gly Ala Gly Val His
 100 105 110
 Met Trp Asn Phe Ile Ser Gly Ile Gln Leu Phe Thr Phe Ser Pro Arg
 115 120 125
 Arg Val Gly Ile Tyr Leu Leu Pro Asn Arg Phe Trp Ala Lys His Met
 130 135 140
 Trp Asn Phe Tyr Leu Val Thr Arg His Ala Asp Val Leu Ser Ala Phe
 145 150 155 160
 Ser Leu His Ser Tyr Trp Met Asn Arg Leu Ile Ala Phe Ala Tyr Leu
 165 170 175
 Leu Pro Arg Arg Gly Pro Arg Leu Tyr Leu Val Ala Tyr Gln Ala Thr
 180 185 190
 Val Arg Leu Ile Val Phe Pro Asp Leu Gly Val Thr Leu Gly Phe Gly
 195 200 205
 Ala Tyr Met Ser Lys Ile Pro Phe Tyr Gly Lys Ala Ile Val Leu Val
 210 215 220

28/28

Gly Gly Val Leu Ala Ala Cys Thr Cys Gly Ser Ser Asp Leu Tyr His
 225 230 235 240

His His His His His
 245

<210> 102
 <211> 245
 <212> PRT
 <213> Hepatitis C virus
 <400> 102

Tyr Leu Val Thr Arg His Ala Asp Val Trp Met Asn Arg Leu Ile Ala
 1 5 10 15

Phe Ala Cys Thr Cys Gly Ser Ser Asp Leu Tyr Val Gly Ile Tyr Leu
 20 25 30

Leu Pro Asn Arg Ile Leu Ala Gly Tyr Gly Ala Gly Val Leu Ile Phe
 35 40 45

Cys His Ser Lys Lys Lys His Met Trp Asn Phe Ile Ser Gly Ile Phe
 50 55 60

Leu Leu Leu Ala Asp Ala Arg Val Leu Leu Phe Leu Leu Leu Ala Asp
 65 70 75 80

Ala Leu Ser Ala Phe Ser Leu His Ser Tyr Gly Val Ala Gly Ala Leu
 85 90 95

Val Ala Phe Lys Lys Thr Ser Glu Arg Ser Gln Pro Arg Arg Leu Gly
 100 105 110

Val Arg Ala Thr Arg Lys Asp Leu Met Gly Tyr Ile Pro Leu Val Val
 115 120 125

Leu Val Gly Gly Val Leu Ala Ala Leu Leu Phe Asn Ile Leu Gly Gly
 130 135 140

Trp Val Tyr Leu Val Ala Tyr Gln Ala Thr Val Tyr Leu Leu Pro Arg
 145 150 155 160

Arg Gly Pro Arg Leu Phe Trp Ala Lys His Met Trp Asn Phe Gln Leu
 165 170 175

Phe Thr Phe Ser Pro Arg Arg Leu Pro Gly Cys Ser Phe Ser Ile Phe
 180 185 190

Ile Pro Phe Tyr Gly Lys Ala Ile Arg Met Tyr Val Gly Gly Val Glu
 195 200 205

His Arg Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Arg Leu Ile Val
 210 215 220

Phe Pro Asp Leu Gly Val Val Ala Gly Ala Leu Val Ala Phe Lys His
 225 230 235 240

His His His His His
 245